## **Amendments to the Claims**:

A clean version of the entire set of pending claims, including amendments to the claims, is submitted herewith per 37 CFR 1.121(c)(3). This listing of claims will replace all prior versions, and listings, of claims in the application.

## **Listing of Claims:**

1. (Currently Amended) A method for translating a communication between Standard Commands for Programmable Instrumentation (SCPI) protocol and .NET protocol, the method comprising:

receiving at an instrument via a communication link a communication from a client comprising a processor and a memory, the communication comprising one of an SCPI protocol command and SCPI protocol query;

when the communication is [[a]] the SCPI protocol command from a client, converting the SCPI protocol command to a .NET protocol command; and

evaluating the .NET protocol command to determine the validity of parameters sent from the client with the SCPI protocol command;

otherwise, when the communication is [[a]] the SCPI protocol query-from the client,

converting the SCPI protocol query to a .NET protocol query; and evaluating the .NET protocol query to determine the validity of parameters sent from the client with the SCPI protocol query; and

calling an appropriate Application Program Interface (API) of an instrument application in the instrument, wherein the communication is intended for the instrument application and wherein the API is responsive to method calls in the .NET protocol.

2. (Previously Presented) The method as recited in claim 1, further comprising:

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INTEGRATED ENCLOSURE AND CONTROLLER FOR VIDEO SURVEILLANCE CAMERA

CROSS REFERENCES TO RELATED APPLICATIONS Not Applicable

# STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

#### BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to video surveillance cameras, and more particularly to an improved enclosure and mounting chassis for a video surveillance camera and improved operation and control for an associated pan and tilt video surveillance camera assembly.

Description of the Related Art

Presently, installation, set-up, and servicing of video surveillance camera enclosures, commonly called dome cameras, are relatively difficult and time consuming. Installation of the surveillance camera requires assembly of the camera chassis into the enclosure at the installation site to accommodate cable connection and data addressing. In addition, servicing of installed cameras often requires partial, if not complete disassembly of the camera chassis, which results in increased repair time and costs.

An improved video surveillance camera enclosure is desired, which reduces the time and costs associated with installation and service.

### BRIEF SUMMARY OF THE INVENTION

One aspect of the present invention is an apparatus and method for controlling a stepper motor in a video surveillance camera dome that includes decoding a command for a specific camera action. Setting the state of a state machine based upon the decoded command. Instructing a position control process and a speed control process based upon the state of the state machine. The speed control process sends a speed control signal to the position control process. A drive signal is send from said position control process to a motor current process

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and a phase control process to generate the current and phase signals to control the stepper motor. The state machine can include a manual mode in which instructions to the position control process and the speed control process are the camera speed and direction. The state machine can include a target mode in which instructions to the position control process and a speed control process include a desired camera location. The stepper motor drive current is preferably a non-linear current. The speed control signal includes ramp up and ramp down speed control for gradually increasing motor speed and gradually decreasing motor speed, respectively.

A second aspect of the invention is an apparatus and method for detecting a plurality of pan positions in a stepper motor driven panable video surveillance camera of the type having a home sensor and detector to detect a home pan position and setting a pan motor step count to a known value at the home position. A plurality of position sensors and a home sensor are placed in a spaced relation on a slip ring assembly of the panable video surveillance camera. Each of the position sensors and the home sensor are detected by a detector positioned in a preselected location during panning of the video surveillance camera, each of the position sensors and the home sensor have an associated desired pan motor step count when they are detected. The pan motor step count is reset to the desired motor step count at each of the position sensor locations and the home sensor location when they are detected. During panning of the video surveillance camera where the camera is not panned through a full pan range of motion to detect the home sensor, at least one of the position sensors is detected and used to reset the pan motor step count to the desired pan motor step count. The difference between the desired pan motor step count and the pan motor step count is determined at each of the position sensor locations and the home sensor location when they are detected. The difference in the desired step count to the motor step count at each of the position sensor locations and the home sensor location is stored when detected. Resetting the pan motor step count to the desired motor step can be performed in a complex programmable logic device instead of a microprocessor to reduce delay errors.

A third aspect of the invention is an apparatus and method for detecting a plurality of tilt positions in a stepper motor driven tiltable video surveillance camera of the type having a home sensor and detector to detect a home tilt position and setting a tilt motor step count to a known value at the home position. A plurality of position sensors and a home sensor are placed in a spaced relation on a tilt assembly of the tiltable video surveillance camera. Each

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of the position sensors and the home sensor are detected by a detector positioned in a preselected location during tilting of the video surveillance camera, each of the position sensors and the home sensor have an associated desired tilt motor step count when they are detected. The tilt motor step count is reset to the desired motor step count at each of the position sensor locations and the home sensor location when they are detected. During tilting of the video surveillance camera where the camera is not tilted through a full pan range of motion to detect the home sensor, at least one of the position sensors is detected and used to reset the tilt motor step count to the desired tilt motor step count. The difference between the desired tilt motor step count and the tilt motor step count is determined at each of the position sensor locations and the home sensor location when they are detected. The difference in the desired step count to the motor step count at each of the position sensor locations and the home sensor location is stored when detected. Resetting the tilt motor step count to the desired motor step is performed in a complex programmable logic device instead of a microprocessor to reduce delay errors.

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A fourth aspect of the invention is an apparatus and method for controlling a heater in a video surveillance camera housing by first measuring a temperature within the video surveillance camera housing. The heater element within the housing is deactivated if a first thermostat is active. The heater element is activated if a second thermostat is not active. The heater element is activated if the second thermostat is active and a heater timer is on. The heater element is activated and the heater timer is turned on if the second thermostat is active and a heater manual request is received, and the heater element is deactivated if the heater manual request is not received. The first thermostat and the second thermostat are active when the temperature goes higher than about 5 degrees above a first and a second set temperature, respectively.

Objectives, advantages, and applications of the present invention will be made apparent by the following detailed description of embodiments of the invention.

## BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Figure 1 is an exploded lower perspective view of one embodiment of the present invention.

Figure 2 is an exploded upper perspective view of one embodiment of the present invention.

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Figure 3 is an exploded upper perspective view of one embodiment of the video surveillance camera chassis of the present invention.

Figure 4 is partial cross-sectional view taken along line 4-4 in Fig. 3.

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Figure 5 is an exploded lower perspective view of an alternate embodiment of the present invention with heater for outdoor applications.

Figure 6 an exploded upper perspective view of the embodiment of Fig. 5.

Figure 7 is an exploded perspective view of the heater assembly used with the embodiment of Fig. 5.

Figure 8 is a block diagram of the controller for the present invention.

Figure 9 is a partial view of the armature of a stepper motor used with the present invention.

Figure 10 is a flow chart of the logic control process for pan motor control.

Figure 11 is a block diagram of a state machine associated with that shown in Fig. 10.

Figure 12 is a partial view of the tilt assembly and tilt home sensor used with the present invention.

Figure 13 is a partial view of the pan slip ring assembly and pan home sensor used with the present invention.

Figure 14 is a flow chart for the heater control program of the present invention.

## DETAILED DESCRIPTION OF THE INVENTION

Referring to Fig. 1, one embodiment of the present invention is illustrated at 2. Pan and tilt video camera assembly 4 is installed on video surveillance camera chassis 6. Chassis 6 is inserted into video surveillance camera housing 8 as illustrated and as fully described hereinbelow. Camera housing 8 is adapted to be inserted into a suitable opening in a ceiling (not shown). As illustrated in this example, housing 8 is shaped substantially like a cylinder and the corresponding opening in the ceiling must be substantially circular and sized large enough in diameter to receive housing 8 but smaller in diameter than flange 10. Flange 10 will thus rest against the lower surface of the ceiling at the perimeter of the opening when housing 8 is inserted therein. Housing 8 includes a plurality of mounting clamps 12 around the circumference of housing 8, each positioned on a threaded fastener 13. Mounting clamps 12 have a first position substantially flush with the exterior of housing 8 to facilitate insertion of housing 8 into the opening in the ceiling.

- 18. (Original) The system as recited in claim 17, further comprising: a second format converter module configured to convert the SCPI protocol response in a .NET stream format into SCPI format order.
- 19. (Original) The system as recited in claim 15, further comprising:a third format converter module configured to convert an out of band IEEE488.1 signal into a .NET signal.
- 20. (Previously Presented) The system as recited in claim 15, further comprising:

a status module comprising an event message queue and a status register wherein the event message queue and the status register store event occurrence information from an instrument application;

an event translator module configured to receive notice of event occurrence from the status module and to translate that notice into a SCPI status notification.